

2007-10-26 Reverse Protons Scrape Accumulator beam and send to Debuncher

Saturday, October 27, 2007
4:00 PM

- Establish Reverse protons
 - Leave beam in the accumulator
 - Use scrapers to define the beam
 - Send that beam to the debuncher.
- Ran Reverse Protons to Debuncher aggregate
 - To get beam to stay in the accumulator, disabled that trigger \$90 that exists in the beam loop.
 - ARF1 was turned off
 - Completed a Accumulator vertical scan with TJ307, noting touch and extinction points.
 - Mis-steared the beam with D:VS901, and repeated scan.
 - Loss monitors clear on \$0F, start on a \$02.
 - Completed horizontal scan with RJ500
- We can now calculate collimator touch points (x_t) at various beam sizes by adding the extinction point (x_e) to the square root of the product of the beta and desired emittance.

$$x_t = \sqrt{\beta \epsilon} + x_e$$

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- Fall 2007 Current values for Beta are:

	β_x	β_y
Debuncher	12.27m	10.66m
Accumulator	19.39m	24.33m

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- We calculated touch points for horizontal and vertical values from 1 pi to 10pi.
- So to make a 2pi x 2pi beam
 - TJ307=5.17
 - RJ500=13.08
 - "10" sector loss monitors start, stop and clear times set to \$90.
 - Plot has y-axis with a:beam3 (-2 to 4), d:beam4 (-2 to 4), LM, LM
 - Now, inject beam all the way to the Debuncher
- Results are posted in the Pbar Elog.



19:11:25- The scrapers were set to define a known size beam and then the DCCTs in both rings were recorded. After taking into account the offsets (-0.11mA and +0.11mA for the A:BEAM and D:BEAM, respectively), the ratio of the adjusted DCCT vaules give an efficiency.

Here are the results:

. Hor size (pi) Ver Size (pi) D2A Eff 1 1 91.44% 2 2 91.74% 2 4 91.06% 4 2 90.18% 4 4 90.25% 4 @ 88.96% @ 4 89.91% @ @ 89.00% . where @ means scraper withdrawn

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